Posttraumatic Stress Disorder

Acute and Long-Term Responses to Trauma and Disaster

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Chapter 11

Combat Exposure and PTSD Among Homeless Veterans of Three Wars

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Anecdotal evidence and systematic surveys have revealed large numbers of veterans—especially veterans who served during the Vietnam era (1964–1975)—among the homeless population in the United States (Farr et al. 1986; Gelberg et al. 1988). Surveys conducted during the 1980s indicated that close to half of homeless veterans served during the Vietnam era (Robertson 1987) compared with only 28% of veterans in the general population (U.S. Census Bureau 1989). These data have led researchers to suggest that homelessness might be yet another consequence of military service during the Vietnam War (Robertson 1987)—and, more specifically, of combat-related posttraumatic stress disorder (PTSD).

The National Vietnam Veterans Readjustment Study (NVVRS), an epidemiologic survey conducted in 1986–1987, found that more than a decade after the last American soldier left Vietnam, 15.2% of those who had served in the Vietnam theater continued to exhibit symptoms of PTSD (Kulka et al. 1989, 1990). Among these veterans, PTSD was associated with other readjustment problems, such as substance abuse, troubled interpersonal relationships, and unemployment (Kulka et al. 1990)—problems that researchers also frequently identify as risk factors for homelessness (Rossi 1989). In fact, among Vietnam veterans surveyed in the NVVRS who met the criteria for PTSD, 23.8% reported that they had been homeless for at least a month or more compared with only 8.1% of all Vietnam veterans (Kulka et al. 1990).

The NVVRS and other studies have established that sustained exposure to the fear, rage, horror, guilt, and grief of war can have lifelong effects on mental health and social adjustment. Yet the relationship of wartime military service, combat exposure, and full PTSD to homelessness has yet to receive systematic scientific scrutiny. Researchers have attributed the general increase in homelessness during the 1980s primarily to broad social factors, such as the declining incomes of working people, the shortage of low-income housing, the declining value of public support payments, and the escalating epidemic of urban drug abuse (Burt 1992). Individual factors found to increase the risk of homelessness include unemployment and psychiatric illness, especially schizophrenia and alcoholism (Burt 1992; Rossi 1989). Thus, the association of Vietnam era service and PTSD with homelessness could be a spurious relationship, reflecting the effect of confounding factors associated with both PTSD and homelessness—factors such as poverty, unemployment, substance abuse, and/or psychiatric disorders other than PTSD.

IDENTIFYING RISK FACTORS FOR HOMELESSNESS AMONG VETERANS

Epidemiologists rely on two basic approaches to identify the causes of disease (Kelsey et al. 1986). In the *prospective* or *cohort* approach, investigators observe a sample of individuals, some of whom have been exposed to a hypothesized risk factor over time. If those exposed to the risk factor experience a higher incidence of disease than those who are not exposed, the investigators presume that the risk factor has an etiologic role in the disease. In the *retrospective* or *case-control* approach, investigators compare a sample of people affected by a disease (cases) with an unaffected sample (control subjects) with respect to the presence of the hypothesized risk factor. Under this approach, the investigators conclude that the risk factor has an etiologic role in causing the disease if it is more common among cases than among control subjects (assuming that other factors are equal). The foundation of case-control studies is the fact—demonstrated by Cornfield (1951)—that the *exposure odds ratio* (the odds of exposure to the risk factor among cases relative to the odds of exposure to the

risk factor among control subjects) is equivalent to the *disease odds ratio* in a prospective study (the odds of developing the disease among exposed subjects relative to the odds of developing the disease among nonexposed subjects) (Schlesselman 1982).

To assess the relationship of stressors associated with wartime military service (the risk factors) and homelessness (the "disease"), we have conducted a series of studies comparing homeless and nonhomeless samples with respect to veteran status (Leda and Rosenheck 1992, in press), service during a wartime era (Rosenheck et al. 1991, in press), exposure to combat (Rosenheck et al. 1991, 1992), and a diagnosis of PTSD (Rosenheck and Fontana, in press). If wartime military service, combat exposure, or PTSD were risk factors for homelessness, we would expect to find a significantly higher prevalence of these risk factors in homeless samples than in nonhomeless samples.

METHODS

Databases

We derived data on homeless persons for our studies from three data sets. First, we obtained data on the proportion of veterans among homeless persons from previously unpublished data shared by the authors of four methodologically rigorous and frequently cited community surveys of homeless Americans, conducted between 1986 and 1988 (Breakey et al. 1989; Burt and Cohen 1988; Koegel et al. 1989; Rossi et al. 1986).

Second, we obtained more detailed data on sociodemographic status and military service from structured intake evaluations of more than 50,000 homeless veterans assessed in the U.S. Department of Veterans Affairs' national Homeless Chronically Mentally Ill Veterans (HCMI) program (Rosenheck et al. 1989). This program emphasizes community outreach to inform a broad range of homeless veterans about available Veterans Administration (VA) services; it focuses specifically on veterans who experience psychiatric and substance abuse problems. Therefore, data from this sample may be more comparable to data obtained from help-seeking clinical samples than to data from representative community surveys.

Finally, we obtained detailed data on premilitary, military, and postmilitary experiences of formerly homeless veterans who participated in the NVVRS from public-access data tapes (Kulka et al. 1989).

Researchers in case-control studies select control groups that have had similar exposure to factors other than the risk factor under investigation during the period in question (Schlesselman 1982). In our comparison of the proportion of veterans in homeless and nonhomeless samples, we considered veterans of similar age and race, using national data from the March 1987 current population survey (U.S. Department of Commerce 1987), the Census Bureau's annual sample survey of the U.S. population.

We used two control groups in our examination of combat exposure among homeless and nonhomeless veterans. The first control group was a representative national sample of noninstitutionalized veterans from the Third Survey of Veterans (U.S. Census Bureau 1989). To enhance comparability with the homeless sample, we included only veterans in the lowest income quartile from this sample in each military service era. The second control group consisted of veterans in a national survey of VA outpatient mental health clinic users (Buit, personal communication, June 1993; Ronis et al. 1992).

In our examination of PTSD prevalence among homeless and nonhomeless veterans, we compared homeless combat veterans contacted in a VA community outreach program with combat veterans from the same military service eras who received mental health services from VA outpatient clinics. We also compared estimated PTSD prevalence in the homeless sample with PTSD prevalence among Vietnam veterans in the lowest quartile on personal income in the NVVRS.

Analyses

We calculated odds ratios for each of these comparisons reflecting the relative risk of homelessness with regard to veteran status, combat exposure, and PTSD. In our final analysis, we chose veterans surveyed in the NVVRS who had never been homeless as a control group for comparison with those who did report past homelessness; we used structural equation modeling of the sequential influence

of various risk factors on homelessness in the comparison of these two groups.

RESULTS

Veteran Status and Wartime Military Service as Risk Factors

In Rosenheck et al. (in press), we combined data from the four community surveys to estimate the proportions of veterans in each of five age cohorts of homeless men and compared those figures with the proportions of veterans in the general population (Table 11–1). The odds ratios indicated that veterans in the post-Vietnam generation (ages 20–34 years) and in the generation between Korea and Vietnam (ages 45–54 years) had a significantly greater risk of homelessness than nonveterans in those age cohorts. In contrast, veterans who served during the Vietnam era (the 35–44 year age cohort) or during the Korean or World War II eras (ages 55–64 and greater than 64) were at no greater risk of homelessness than nonveterans.

Combat Exposure as a Risk Factor

Rosenheck et al. (1991) examined combat exposure in a sample of more than 10,000 homeless veterans evaluated in the HCMI program. We found that 40.5% of homeless veterans who served during the Vietnam era (1964–1975) reported having been fired on during service in a war zone. This proportion was only slightly greater than the proportion of veterans reporting combat exposure in a community sample of Vietnam era veterans (38.4%) (U. S. Census Bureau 1989).

Table 11–2 extends these findings, using previously unpublished data gathered from tens of thousands of additional homeless veterans assessed between 1988–1992 in the same VA program. This table presents data on combat exposure among homeless veterans who served during three wartime eras: the Vietnam conflict (1964–1975), the Korean conflict (1950–1955), and World War II (1941–1946). For comparison, the table displays data on combat exposure among low-income veterans in the national sample surveyed in the Survey of

Table 11–1. Veterans among homeless men (1986–1987) and among men in the general population (1987), by age group

Age group	Data from homeless surveys (N = 2,223)			Current population survey (U.S. estimates, 1987)			Odds ratio for homelessness among veterans	
	Total homeless (n)	Veterans (n)	Veterans (%)	Total (n)	Veterans (n)	Veterans (%)	Odds ratio	95% confidence interval
20–34	939	287	30.6	30,021	3,016	10.0	3.95	3.39–4.58
35–44	576	214	37.2	16,310	6,015	36.9	1.01	0.85–1.21
45–54	412	242	58.7	11,845	5,312	44.8	1.75	1.45–2.15
55–64	251	155	61.8	10,304	7,205	69.9	0.69	0.53–0.91
>64	45	17	37.8	11,550	5,347	46.3	0.71	0.37–1.34
Total	2,223	915	41.2	80,030	26,895	33.6	1.38	1.05–1.85

Table 11–2. Comparison of combat exposure among homeless and nonhomeless veterans, by service era

	All veterans (*n*)	Combat veterans (*n*)	Combat veterans (%)	Odds ratio	95% confidence interval
Veterans in VA homeless programs					
Vietnam era	28,712	11,670	40.6		
Korean era	3,870	1,386	35.8		
World War II era	2,129	1,176	55.2		
1987 survey of veterans[a]					
Vietnam era	490	238	48.6	0.73	0.60–0.87
Korean era	306	124	40.5	0.85	0.66–1.08
World War II era	618	399	64.6	0.68	0.56–0.82
VA outpatient clinics					
Vietnam era	34,855	20,486	58.8	0.48	0.43–0.53
Korean era	9,797	4,683	47.8	0.61	0.56–0.66
World War II era	17,594	12,388	70.4	0.52	0.47–0.57

Note. VA = Veterans Administration.
[a]Includes only veterans whose personal incomes are below the 25th percentile for that service era.

Veterans (U. S. Census Bureau 1989), and—because the HCMI program is a clinical convenience sample—in the 1990 survey of VA mental health clinics (Buit, personal communication, June 1993; Ronis et al. 1992).

In each service era, the proportion of combat veterans among homeless veterans was smaller than the proportions of combat veterans in both the low-income general veteran population and the VA mental health clinic population. Five of the six odds ratios were significantly less than 1.0, suggesting that combat veterans were less likely than non-combat veterans to become homeless.

PTSD as a Risk Factor

At the time of intake assessment, HCMI program clinicians document their initial diagnostic impressions, including whether the veteran appeared to experience combat-related PTSD. Table 11–3 presents the diagnosed prevalence of PTSD among homeless combat veterans of each wartime service era. Although these data were based on preliminary clinical assessments, we believe that the prevalence of PTSD among Vietnam combat veterans (45.1%) is valid because it is similar to the prevalence of PTSD (43.2%) estimated in a subset of 627 Vietnam veterans in the HCMI program, which used standardized assessment methods (Rosenheck et al. 1992). Comparison data in Table 11–3 are from the 1990 survey of VA mental health outpatient clinics (Ronis et al. 1992).

The odds ratios reflect the relative risk of homelessness among combat veterans with PTSD, compared with veterans receiving mental health treatment who did not have PTSD. In each case, the prevalence of PTSD among the homeless veterans was lower than in the VA clinic sample. On two of three comparisons, the risk of homelessness associated with PTSD was significantly lower than with other mental illnesses.

Finally, we compared the proportion of homeless Vietnam veterans diagnosed with PTSD in the HCMI program with the proportion of low-income Vietnam veterans in the NVVRS community sample who met the criteria for PTSD, using the 89-community sample cutoff score on the Mississippi Scale for Combat-Related PTSD (Keane et al. 1988). The resulting PTSD prevalence estimates

Table 11–3. Diagnosed PTSD among homeless combat veterans and combat veterans in VA mental health outpatient clinics, by service era

	Veterans in VA homeless programs			VA outpatient clinics				
	All veterans (*n*)	PTSD (*n*)	PTSD (%)	All veterans (*n*)	PTSD (*n*)	PTSD (%)	Odds ratio	95% confidence interval
Vietnam era	11,670	5,267	45.1	20,486	9,446	46.1	0.96	0.82–1.11
Korean era	1,386	163	11.8	4,683	663	14.2	0.81	0.67–0.97
World War II era	1,176	89	7.6	12,388	2,079	16.8	0.41	0.32–0.51

Note. PTSD = posttraumatic stress disorder. VA = Veterans Administration.

(42.9% in the HCMI sample versus 46.4% in the low-income NVVRS sample) did not yield a significant risk ratio for homelessness resulting from PTSD (odds ratio = 0.87, 95% confidence interval = 0.68–1.07).

Structural Equation Modeling of Past Homelessness

The third source of information on the antecedents of homelessness among veterans was the rich data set available from the NVVRS. Rosenheck and Fontana (in press) carefully reanalyzed these data, using structural equation modeling techniques, to investigate the contribution of numerous health status and social adjustment factors to past homelessness. Among the factors examined were premilitary personal experiences, exposure to war zone stress (including a continuous measure of combat exposure), current PTSD, other psychiatric disorders, and substance abuse.

The most important clinical risk factors for homelessness in these analyses were alcohol and psychiatric illnesses other than PTSD. PTSD had no statistically significant relationship to homelessness independent of other factors. Military service variables had a modest total relationship with past homelessness, with a significant contribution coming from high levels of combat exposure and from participation in atrocities.

DISCUSSION

Before discussing these results, we must acknowledge several limitations of these studies. First, although the sampling strategies used in the community surveys were carefully designed and implemented, data on military service in those surveys were limited to simple determinations of service in the armed forces. Second, although more detailed data on military service and the prevalence of PTSD were available from intake assessments from the VA's homeless program and from the survey of VA mental health clinics, the combat indicator did not reflect the degree of combat exposure. Furthermore, diagnostic data were based on clinical assessments rather than standardized test scores, and both sources of data were convenience samples rather than population-based probability samples. Finally,

the NVVRS, although rich in standardized clinical data and based on a national sampling framework, included only rudimentary information on past homelessness. Thus, although the results of these studies were generally consistent with one another, they should be regarded as suggestive rather than conclusive.

Review of Findings

In none of the studies did wartime service, combat exposure, or PTSD appear to be more frequent among currently homeless veterans than among comparison subjects. In the NVVRS sample, however, veterans who were exposed to higher levels of combat stress and veterans who participated in atrocities were more likely to report past homelessness. With this exception, the data offer little support for the expected causal relationship between homelessness and wartime military service, combat exposure, or PTSD. In fact, the only two groups of veterans who appeared to be at greater than expected risk for current homelessness were those who served in peacetime. The higher risk of homelessness among these veterans may reflect the fact that peacetime military personnel policies allow less well-adjusted recruits to join the armed forces in the first place (Janowitz 1975; Laurence et al. 1989; Rosenheck et al. in press).

Veterans Among the Homeless Population

Our findings provide a reminder that, in spite of abundant evidence that wartime trauma can result in prolonged PTSD and other problems, veterans—including veterans of war-zone service—are, in many respects, as well off (or better off) than other Americans. Annual reports from the VA during the 1980s consistently indicated that the median income of male veterans was higher than the median income of age and gender-matched nonveterans (Veterans Administration 1988), and the NVVRS showed that veterans who served in the Vietnam theater had higher incomes than those who served during the Vietnam era but did not serve in Vietnam (Kulka et al. 1990). In addition, the VA, state veterans assistance offices, and veteran service organizations offer veterans a broad array of financial, educational, and health care services that are not available to nonveterans.

The growth of homelessness in this country since 1980 is a symptom of far reaching changes in the American economy and in American society (Danziger and Gottschalk 1993). The three decades after World War II were a period of unprecedented economic growth, during which homelessness was less common than at any previous time in American history (Rossi 1989). During the recession of the early 1980s, however (when unemployment briefly reached Depression-era levels), homeless people became increasingly visible on city streets across the country—an apparent consequence of the recession. Homelessness continued to increase during the following years, despite renewed economic expansion and high employment (U.S. Conference of Mayors 1987). By the end of the 1980s, economists recognized that the years from 1979 to 1989 had seen a dramatic redistribution of wealth in the United States: while incomes increased by 17% among the richest fifth of the population, they declined by 7.6% among the poorest fifth of families (Mishel and Frankel 1991).

This redistribution of income—itself a consequence of changes in the world economy that have put low-income American workers at a serious disadvantage in world labor markets (Reich 1991)—may be the best explanation for the overall growth of homelessness. Thus, although PTSD affects a small but substantial segment of the veteran population (about 470,000 of 8.2 million Vietnam-era veterans), homelessness and the forces that produce it have had a far more widespread impact; they have affected veterans as they have affected many other segments of our society. The story of homeless veterans is a story of America much more than it is a story of Vietnam.

One of the distinctive features of democratic society in the United States is that military service, at all levels, is the responsibility and obligation of the citizenry, not an aristocratic elite. Although some researchers have claimed that the armed forces—especially during the Vietnam war—have drawn disproportionately from lower socioeconomic classes (Appy 1993), the preponderance of studies show that American military forces have been generally representative of the male population (Berryman 1988). Thus, the presence of large numbers of veterans, especially Vietnam-era veterans, among the homeless population may be attributable to three factors: 1) there are large numbers of veterans among the male citizens of the United States; 2) the age range at which men are most vulnerable for

homelessness (35–45 years) (Rossi 1989) is the age range of the Vietnam-era veteran population; and 3) veterans are subject to the same social and economic currents as other Americans. In other words, there are so many veterans among the homeless population precisely because the United States has a representative, citizen-based military, rather than one based on a societal elite.

Clinical Implications

Our analysis indicates that wartime military service is not a major independent cause of homelessness. Given this finding, how should practitioners consider past military service and PTSD in the treatment of homeless veterans?

First, even if military service is not a major cause of homelessness among veterans, more than two-fifths of our clinical sample of homeless combat veterans did exhibit war-related PTSD. These veterans unquestionably are entitled to treatment and compensation to the extent that they have illnesses related to their military service.

Second, veteran status—especially wartime service—may play an important role in treatment and rehabilitation. Demoralization and self-doubt are barriers that virtually all homeless persons must overcome as they attempt to reenter mainstream society. Many veterans recall their military service with great pride—as a time when they endured and overcame great hardship. Clinical programs that tap and enlarge this reservoir of pride may rekindle a self-respect that can enhance participation in treatment and increase the likelihood of exiting from homelessness (Rosenheck et al. 1992; Smith and Yates 1992).

Policy Implications

Finally, we must consider the implications of our analysis for public policy toward homeless veterans. Citing a finding that military service does not directly contribute to homelessness, some observers may claim that homelessness among veterans is a local issue and that the federal government need not make special efforts to provide assistance. Two lines of reasoning argue against this position—the first based on the American tradition of collective responsibility

for indigent veterans, the second on our national commitment to human rights.

Since the time of Plymouth Colony, Americans have endorsed and conscientiously upheld the nation's responsibility to assist veterans injured in the course of military service (Adkins 1968), although public attitudes toward veterans with impairments not specifically incurred in combat or other service-related duties have been mixed. On one hand, some Americans have been strong veterans' advocates: Corporal J. M. Tanner (Secretary of the Treasury in the 1880s), for example, said he would "drive a six-mule team through the treasury" for Union veterans of the Civil War; once in office, he proceeded to do so (Skocpol 1992). On the other hand, leaders such as Alexander Hamilton and Franklin Roosevelt—although unquestioned patriots—have argued that pensions and other benefits for nonservice-connected veterans place an unwarranted burden on the federal treasury (Ross 1969; Severo and Milford 1989).

Since the end of World War II, the VA health care system has grown to 172 facilities; these facilities provide health care services to millions of indigent nonservice-connected veterans each year. In addition, the federal government provides $2.4 billion annually to more than 600,000 wartime veterans in the form of nonservice-connected pension payments (Veterans Administration 1988). Notably, however, in 1946 the Veterans Emergency Housing Program—a program that would have provided low-income housing to poorer veterans—failed to garner enough support to become law (Ross 1969). With that decision, the broad scope of veterans benefits stopped short of providing low-income veterans with the type of housing subsidies that would be particularly helpful to homeless veterans now.

Nevertheless, many Americans feel that veterans who served the nation in wartime should not be left to fend for themselves when faced with homelessness, even if they have no specific statutory claim to special assistance. Government leaders recognize this responsibility to provide rehabilitative opportunities for veterans, as VA and congressional support for nearly 100 specialized outreach, treatment, and rehabilitation programs for homeless veterans that have been established during the past 7 years—at a time of severe budgetary constraint—demonstrates.

Even in the absence of an explicit legislative mandate to assist homeless veterans, the government's endorsement of the Universal

Declaration of Human Rights (passed by the United Nations General Assembly on December 10, 1948) reiterates the nation's commitment to attend to the needs of all homeless persons. Section 25 of that Declaration asserts that "Everyone has the right to a standard of living adequate to the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services. . . ." Although no nation, sadly, has achieved full compliance with this section—or many of the other 29 articles of the Universal Declaration of Human Rights—many Americans agree that citizens who serve and sacrifice for the nation in time of war clearly deserve these most fundamental of entitlements.

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